

Patent Claims

1. Controllable mixer (3) having at least one transistor (12), to which an oscillator signal (LO) and an input signal (RF_{IN}) are supplied, with the input signal (RF_{IN}) comprising a useful signal (RF_{use}) and further signals (RF_{adj}), and with an output signal (IF) being produced as an output of the mixer (3), **characterized in that** a controller is provided, which applies a control signal (U_s) to the mixer as a function of the signal quality of the output signal (IF), in that the operating point of the at least one transistor (12) can be set by means of the control signal (U_s), in which case the intermodulation immunity and/or the noise in the output signal (IF) can be varied as a function of the operating point of the at least one transistor (12).
2. Controllable mixer according to Claim 1, **characterized in that** a demodulator (8) which is connected downstream from the mixer (3), and an evaluation circuit (7) are provided for assessment of the signal quality of the output signal (IF).
3. Controllable mixer according to Claim 2, **characterized in that** the evaluation circuit (7) assesses the error rate of a digitally coded signal.
4. Controllable mixer according to one of the preceding claims, **characterized in that** a memory (5) is provided for recording initial values, on the basis of which the signal quality can be assessed and optimized.
5. Controllable mixer according to Claim 4, **characterized in that** the initial values comprise information about a desired minimum signal quality, the symbol rate, the

code rate, and/or the modulation method, and optimization routines for reception optimization can be selected as a function of the initial values.

- 5 6. Method for controlling a mixer (3) in a receiver having at least one transistor (12) to which an oscillator signal (LO) and an input signal (RF_{IN}) are supplied, with the input signal (RF_{IN}) comprising a useful signal (RF_{use}) and further signals (RF_{adj}), and with an output
10 signal (IF) being produced as an output of the mixer (3), **characterized in that** the method comprises the following steps:
- assessing the signal quality of the output signal (IF);
 - 15 - setting the operating point of the at least one transistor (12) as a function of the quality of the output signal (IF);
- and in that the intermodulation immunity and/or the noise of the at least one transistor (12) are set by
20 means of the operating point of the at least one transistor (12).
7. Method according to Claim 6, **characterized in that** the error rate of a digitally coded signal is evaluated in
25 order to assess the signal quality.
8. Method according to Claim 6 or 7, **characterized in that** initial values which are stored at the start are selected in order to assess the signal quality and in
30 order to set the operating point of the transistor (12).
9. Method according to Claim 8, **characterized in that** different initial values and/or optimization routines

are selected for different modulation methods, code rates and/or symbol rates.